Dr. Peterson
GYSTC STEM Teacher Academy Recognition Ceremony
11:15 a.m. – 1 p.m. Monday, May 4, 2015, Georgia Tech Manufacturing Institute

Thank you to Georgia Youth Science & Technology Centers and executive director Betsy Green for providing this opportunity to speak to you about STEM education and the vital role it plays and will play in the future of our country and the world. Just as in the classrooms of the many dedicated teachers we have with us today, Georgia Tech is a place where STEM learning is celebrated. We are dedicated to taking that knowledge with which our students arrive, enhancing it, and training them to apply it in real-world situations to make life better for others, both in our own country and around the world.

One of the ways we do that is through student competitions. Two of our biggest and most prestigious are the InVenture Prize and the Capstone Design Expo, which start early in the year and culminate in April with judged finals. I am amazed at the creativity our students demonstrate to invent products that offer solutions to engineering challenges in fields ranging from biomedical to mass sanitation to cooking safety.

Let me share some of those with you, and I think you'll be impressed, too.

Georgia Tech's InVenture Prize is the nation's largest undergraduate invention competition, and Georgia Public Broadcasting airs the finals live from our campus. It's an exciting night, and it's been called "American Idol for geeks." About a dozen Georgia schools participated in our K-12 version of the contest and attended the finals, including four elementary schools.

Our 2014 winner was Team Sanivation, composed of three female students who invented an inexpensive mobile toilet to help nearly 2.6 billion people who lack access to hygienic bathrooms. All three members traveled to Kenya last summer for field trials.

At this year's InVenture finals, the winning team invented a safety device called FlameTech, which sends out an alert when the gas level of a propane grill becomes dangerous. The team members came from three different disciplines: computer science, mechanical engineering, and business administration.
The runner-up team invented the OculoStaple, a medical device to safely treat ptosis, drooping of the upper eyelid. And the People's Choice Award went to Team Haplit, which invented an interactive device for teaching Braille to those who were born blind or are living with degenerative disease.

They've done all this while they're still in college!

Our Capstone Design Expo is held each fall and spring. It features work from senior design courses, in which undergraduates research problems, create prototypes, and offer solutions. This spring's Expo was the biggest ever, with more than 1,000 students completing almost 200 projects. More than 75 sponsors funded projects, with Coca-Cola generously sponsoring the Expo itself.

Our overall winner was a team called Shunt Doubles, made up of five biomedical engineering majors who designed a safe, easy, economical way for caregivers to monitor the effectiveness of shunts used to drain cerebrospinal fluid in the brain. The team intends to see if there is a market for their device.

Outside our campus, Georgia Tech has several robust outreach programs to enhance STEM education and interest in our state.

[Tell story of talking to female students and asking them how they decided to go into a STEM field. Most answered that it was through a summer program or robotics camp, etc.]

Some of you are already familiar with our CEISMC organization, which stands for Center for Education Integrating Science, Mathematics, and Computing. In 2014, GYSTC collaborated with CEISMC on an online-course project. CEISMC is our primary K-12 outreach division, and its principal mission is to improve science and math education throughout Georgia.

[Tell story of why we have CEISMC even though we don't have a teaching college at Georgia Tech.]

CEISMC also offers Summer P.E.A.K.S. (Programs for Enrichment and Accelerated Knowledge in STEM), which brings elementary through high school students to our campus for hands-on, interactive learning experiences.

Another of our programs is Horizons@GT, which provides academic, cultural, and recreational program opportunities to encourage students from low-income families to realize their full potential. Horizons@GT partners with two Atlanta public schools, Centennial Place and Drew Charter.

Georgia Tech's College of Computing plays a supporting role for Black Girls CODE, a national organization that seeks to increase the number of women of color in the digital space by empowering girls of color ages 7 to 17 to become innovators in STEM fields, leaders in their communities, and builders of their own futures through exposure to computer science and technology.

Programs like those are complementary to the important work you do in the classroom to help students get excited about STEM education. You are laying the groundwork for students who come to Georgia Tech and other STEM-oriented institutions of higher education.

All great teaching is part empirical and part artistry. It’s not enough that you as teachers know STEM content, although that is vital. Your challenge is the same we face at Georgia Tech, which is to light the creative fire in your students so that they can begin to conceive solutions a complex, growing world requires. Motivating and encouraging students at a very young age is extremely important.

In March, Georgia Tech responded along with more than 120 engineering universities to a presidential call to address 21st-century Grand Challenges. We aspire to graduate 150 Grand Challenges Scholars each year. If we do our job, these students will be fearless learners and problem solvers. But we need your help to prepare them, and we can’t do it without you.

Thank you for your attention today, and if there’s anything we at Georgia Tech can do to help you in your important mission, please let us know.